AMENDMENTS TO THE CLAIMS

1-38. (Cancelled)

39. (Previously Presented) A system for screening lubricant performance, under program control, comprising:

a) a supply of a major amount of at least one base oil of lubricating viscosity;

b) a supply of a minor amount of at least one lubricating oil additive;

c) a plurality of test receptacles;

d) means for conducting molecular modeling of the at least one base oil of lubricating viscosity and the at least one lubricating oil additive to provide leading candidates of the at least one base oil of lubricating viscosity and at least one lubricating oil additive for combination to formulate a leading candidate lubricating oil composition for testing;

e) means for combining selected quantities of the major amount of the at least one leading base oil of lubricating viscosity candidate with selected quantities of the minor amount of the at least one leading lubricating oil additive candidate in the plurality of test receptacles to form a plurality of leading candidate lubricating oil composition samples in the plurality of test receptacles;

f) receptacle moving means for individually positioning said test receptacles in a testing station for measurement of storage stability in the respective sample;

g) means for measuring a first storage stability measurement of the lubricating oil composition sample moved to the testing station and for transferring said first storage stability measurement to a computer controller, wherein said computer controller is operatively connected

to the means for individually moving the test receptacles, and further wherein the means for measuring the first storage stability measurement is carried out in the absence of heating each lubricating oil composition sample;

h) means for measuring a second storage stability measurement of the lubricating oil composition sample moved to the testing station and for transferring said second storage stability measurement to the computer controller, and wherein the means for measuring the second storage stability measurement is carried out after each lubricating oil composition sample is heated to a predetermined temperature for a predetermined time; and

i) means for comparing said second storage stability measurement to said first storage stability measurement of each lubricating oil composition sample to obtain storage stability data for each sample.

40. (Previously Presented) The system of claim 39, wherein said receptacle moving means comprises a movable carriage.

41. (Original) The system of claim 39, wherein the receptacle moving means comprises a robotic assembly having a movable arm for grasping and moving a selected individual receptacle.

42. (Original) The system of claim 39, wherein the receptacle moving means comprises means for agitating the test receptacles.

43. (Original) The system of claim 39, wherein the testing station includes a light source and a photocell aligned with the light source.

44. (Original) The system of claim 39, wherein each test receptacle has a bar code affixed to an outer surface thereof.

45. (Original) The system of claim 44, further comprising a bar code reader.

46. (Previously Presented) A system for screening lubricant performance, under program control, comprising:

a) a supply of a major amount of at least one base oil of lubricating viscosity;

b) a supply of a minor amount of at least one lubricating oil additive;

c) a plurality of test receptacles;

d) means for conducting molecular modeling of the at least one base oil of lubricating viscosity and the at least one lubricating oil additive to provide leading candidates of the at least one base oil of lubricating viscosity and at least one lubricating oil additive for combination to formulate a leading candidate lubricating oil composition for testing;

e) means for combining selected quantities of the major amount of the at least one leading base oil of lubricating viscosity candidate with selected quantities of the minor amount of the at least one leading lubricating oil additive candidate in the plurality of test receptacles to form a plurality of leading candidate lubricating oil composition samples in the plurality of test receptacles;

f) receptacle moving means for individually positioning said test receptacles in a testing station for measurement of storage stability in the respective sample;

g) means for measuring the storage stability in the sample moved to the testing station to obtain storage stability data associated with said sample and for transferring said storage stability data to a computer controller, wherein said computer controller is operatively connected to the means for individually moving the test receptacles.

47. (Previously Presented) A high throughput method for screening lubricating oil additive composition samples, under program control, comprising

(a) conducting molecular modeling of at least one lubricating oil additive to provide leading candidates of the at least one lubricating oil additive to formulate a leading candidate lubricating oil additive sample for testing; and

(b) containing, under program control, a plurality of the leading candidate lubricating oil additive samples, each sample being in a respective one of a plurality of test receptacles;

(c) maintaining each sample at a predetermined temperature for a predetermined time;

(d) measuring the storage stability of each sample to provide storage stability data results for each sample; and,

(e) outputting the results of step (d).

48. (Previously Presented) The method of claim 47, wherein the at least one lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction

modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

49. (Previously Presented) The method of claim 47, wherein the step (c) of maintaining each sample at a predetermined temperature for a predetermined time is performed at a temperature of from about 20°C to about 80°C.

50. (Previously Presented) The method of claim 49, wherein the predetermined period of time is at least about one day.

51. (Previously Presented) The method of claim 47, wherein the step of measuring the storage stability of each sample comprises determining the opacity or light scattering of the sample and comparing the determined opacity or light scattering with the opacity or light scattering of a reference sample.

52. (Previously Presented) The method of claim 51, wherein the opacity of the sample is determined by measuring the intensity of light passed through a sample.

53. (Previously Presented) The method of claim 47, further comprising the step of agitating each sample before measuring the storage stability of the sample.

54. (Previously Presented) The method of claim 47, wherein the plurality of samples are in a linear array and are sequentially moved to a measuring station between a light source and a photocell for individually measuring the storage stability of each sample.

55. (Previously Presented) The method of claim 47, wherein each sample has affixed thereto a bar code identifying the sample.

56. (Previously Presented) The method of claim 55, wherein a robotic assembly selectively retrieves individual test receptacles from an array of test receptacles and individually positions said test receptacles in a testing station for determination of the storage stability.

57. (Previously Presented) The method of claim 56, wherein said robotic assembly is controlled by a computer.

58. (Previously Presented) The method of claim 57, wherein the result of step (d) for each sample is transmitted to the computer, the computer compares the result with a predetermined value delimiting a failure or passing of the result, and the computer identifies failed samples to preclude further testing of the failed samples.

59. (Previously Presented) The method of claim 47, wherein the step of outputting comprises storing the result of step (d) on a data carrier.

60. (Previously Presented) The method of claim 47, further comprising the step of transmitting the result of step (d) to a data carrier at a remote location.

61. (Previously Presented) The method of claim 47, wherein the storage stability measurement of step (d) comprises a sedimentation measurement, color measurement or a viscosity measurement.

62. (Previously Presented) The method of claim 47, wherein the plurality of different lubricating oil additive composition samples further comprise a diluent oil to form an additive concentrate.

63. (Previously Presented) The method of claim 47, wherein the step of molecular modeling is carried out using a computer molecular modeling program.

64. (Currently Amended) A high throughput method for screening lubricating oil composition samples, under program control, comprising:

(a) conducting molecular modeling of at least one base oil of lubricating viscosity and at least one lubricating oil additive to provide leading candidates of the at least one base oil of lubricating viscosity and at least one lubricating oil additive for combination to formulate a leading candidate lubricating oil composition for testing;

(b) containing, under program control, a plurality of the leading candidate lubricating oil composition samples comprising (i) a major amount of the at least one leading base oil of

lubricating viscosity candidate, and (ii) a minor amount of the at least one leading lubricating oil additive candidate in varying percentages in a plurality of test ~~reservoirs~~ receptacles;

(c) maintaining each sample at a predetermined temperature for a predetermined time;

(d) measuring the storage stability of each sample to provide storage stability data results for each sample; and,

(e) outputting the results of step (d).

65. (Previously Presented) The method of claim 64, wherein the base oil is a natural or synthetic oil.

66. (Previously Presented) The method of claim 64, wherein the lubricating oil additive is selected from the group consisting of antioxidants, anti-wear agents, detergents, rust inhibitors, dehazing agents, demulsifying agents, metal deactivating agents, friction modifiers, pour point depressants, antifoaming agents, co-solvents, package compatibilisers, corrosion-inhibitors, ashless dispersants, dyes, extreme pressure agents and mixtures thereof.

67. (Previously Presented) The method of claim 64, wherein the test receptacles are fabricated from a transparent glass.

68. (Previously Presented) The method of claim 64, wherein the step (c) of maintaining each sample at a predetermined temperature for a predetermined time is performed at a temperature of from about 20°C to about 80°C.

69. (Previously Presented) The method of claim 68, wherein the predetermined period of time is at least about one day.

70. (Previously Presented) The method of claim 68, wherein the step of measuring the storage stability of each sample comprises determining the opacity or light scattering of the sample and comparing the determined opacity or light scattering with the opacity or light scattering of a reference sample.

71. (Previously Presented) The method of claim 70, wherein the opacity of the sample is determined by measuring the intensity of light passed through a sample.

72. (Previously Presented) The method of claim 64, further comprising the step of agitating each sample before measuring the storage stability of the sample.

73. (Previously Presented) The method of claim 64, wherein the plurality of samples are in a linear array and are sequentially moved to a measuring station between a light source and a photocell for individually measuring the storage stability of each sample.

74. (Previously Presented) The method of claim 64, wherein each sample has affixed thereto a bar code identifying the sample.

75. (Previously Presented) The method of claim 74, wherein a robotic assembly selectively retrieves individual test receptacles from an array of test receptacles and individually positions said test receptacles in a testing station for determination of storage stability.

76. (Previously Presented) The method of claim 75, wherein said robotic assembly is controlled by a computer.

77. (Previously Presented) The method of claim 76, wherein the result of step (d) for each sample is transmitted to the computer, the computer compares the result with a predetermined value delimiting a failure or passing of the result, and the computer identifies failed samples to preclude further testing of the failed samples.

78. (Previously Presented) The method of claim 64, wherein the step of outputting comprises storing the result of step (d) on a data carrier.

79. (Previously Presented) The method of claim 64, wherein the storage stability measurement of step (d) comprises a sedimentation measurement, color measurement or a viscosity measurement.

80. (Previously Presented) The method of claim 64, wherein the step of molecular modeling is carried out using a computer molecular modeling program.